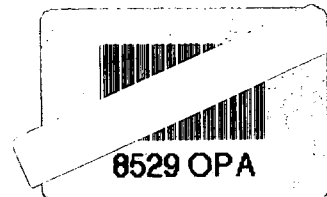


**U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT**



I. HEADING

DATE: 12/10/99
SUBJECT: Naples Truck Stop Removal Action, Vernal, UT
FROM: H. Hays Griswold, OSC Phone: (303) 312-6809
TO: Director, ERD
POLREP No.: POLREP 66

II. BACKGROUND

SITE No.: 43P808L008
Case No.: U940169
FPN No.: 114009
D.O. No.: NA
Response Agency: EPA Region VIII
Address: 999 18th Street, Suite 500
Denver, CO 80202
Response Authority: CWA, OPA (1990)
Party Conducting Action: EPA (PRFA w/USACE)
ERNS No.: U940169
NPL Status: NA
State Notification: State requested EPA action
Action Memorandum Status: NA
Start Date: February 22, 1994
Demobilization Date: NA
Completion Date: To Be Determined

III. SITE INFORMATION

A. Incident Category

The incident occurred at an active facility - a Service Station/Truck Stop/Petroleum Bulk Distributor.

B. Site Description

1. Site Description

No change from previous Polreps.

2. Description of Threat

No change.

C. Evaluation of Site Results

Active treatment was terminated in October 1998 and replaced by a long-term passive phytoremediation system consisting of approximately 300 Sioux-land poplar trees. These were planted down-gradient and cross-gradient of the plume after the October 1998 sampling event. Groundwater sampling from **fourteen** of the sixteen existing monitoring wells was resumed in May 1999, following a six-month pause. This report summarizes the results of the third (conducted 3 November 1999) of three annual rounds of sampling performed in 1999.

Detectable levels of hydrocarbon contamination were found within **seven** of the tested wells. A maximum concentration of **14 mg/l** hydrocarbons as gasoline was detected from monitoring well MW10, located in the center of the suspected plume of groundwater contamination. This level of contamination is **lower** than the **23 mg/l** maximum detected value reported in **August 1999** but is about the same as that found at MW10 in May 1999. Compared to the results of the previous round of sampling, levels of gasoline remained about the same (within 30 percent) in three wells, decreased significantly in three wells, and remained non-detected in six wells. A trace of gasoline (0.03 mg/L) was detected in MW01 for the first time. This result is significant in that it indicates the possibility that the plume has moved across 1620 East.

Field measurements of dissolved oxygen (DO) were also made at each sampling location. The lowest reading (8.9 mg/L) was observed in the well showing the highest concentration of gasoline (MW10). The result suggests that some bioremediation may be taking place, as the DO upgradient of this well was 10.5 mg/L.

Water analysis was performed for gasoline/BTEX by EPA test methods M8015V and SW8020. (See Attachment A for the Data Quality Assessment and a summary of results).

IV. RESPONSE INFORMATION

A. Situation

Date of Notification:	2/08/94
Date of Discovery:	11/01/93
Date Action Started:	2/15/94
Material Involved:	Unleaded Gasoline
Quantity Discharged:	7000 + gallons
Substantial Threat:	Yes
Resource Affected:	Unnamed tributary to Ashley Creek, tributary to Green River
Source Identification:	Naples Truck Stop

1. Removal Actions to Date

Active groundwater treatment was terminated in October 1998 and replaced by a passive phytoremediation system utilizing Sioux-land poplar trees. Planted in November 1998, the trees survived the winter without casualties.

2. Enforcement

No change from previous Polreps.

B. Planned Removal Actions

Three rounds of sampling are scheduled for the year 2000. The possibility that the plume has moved across the north-south poplar tree barrier along 1620 East may provide an opportunity to observe the effectiveness of phytoremediation by the end of the growing season, assuming that the root system has penetrated the water table.

C. Next Steps

Continue to monitor the groundwater monitoring wells. The next sampling event of the groundwater monitoring wells will occur in the **spring of 2000**. Conduct two more rounds of sampling in 2000 and then evaluate results to determine if further monitoring is warranted.

D. Key Issues

The table compares levels of gasoline in monitoring wells for **September and October 1998** with those for **May, August, and November 1999**.

Well No.	September 1998	October 1998	May 1999	August 1999	November 1999
MW01	ND	ND	ND	ND	Trace (0.03 J)
MW02	1.2	0.39	2.0	2.0	1.6
MW03	0.060 J	ND	ND	ND	ND
MW04	ND	ND	0.78	0.64	0.63
MW06	0.90	0.69	ND	Trace (0.03 J)	ND
MW08	2.2	2.2	6.2	3.3	1.3
MW09	0.37	0.11	0.53	0.23	0.11
MW10	31	25	13	23	14
MW14	0.030 J	0.033	ND	ND	ND
MW15	0.041 J	0.027	ND	ND	ND
VMP01	ND	ND	ND	ND	ND
VMP02	4.5	1.2	5.6	3.1	3.1
NGMW01	0.039 J	ND	ND	ND	ND
NGMW06	ND	ND	ND	ND	ND

All results are in units of mg/L.

The detection limit is nominally 0.02 mg/L.

Note: J indicates that the result is an estimated value

BTEX was not found in eight wells – MW01, MW03, MW06, MW14, MW15, VMP01, NGMW01, and NGMW06. It was detected in six wells with the highest values in MW10. Compared to August 1999 results, the levels of BTEX and gasoline remained relatively unchanged. The level of gasoline in MW10 decreased from 23 to 14 mg/L, a modest decrease to the level observed in May 1999. Gasoline was found (albeit only a trace just above the detection limit) in MW01 for the first time, suggesting that the plume may be moving slowly downgradient and may have crossed the north-south stand of poplars lining 1620 East. This finding will be monitored closely next year.

V. COST INFORMATION

Project Ceiling \$ 2,850,000.00

	<u>Costs to Date</u>	<u>Ceiling</u>
<u>Extramural</u>		
TAT	\$ 60,000	\$ 70,000
USACE (Omaha)	\$ 850,000	\$ 1,300,000
USACE (Sacramento)	\$1,574,970	\$ 1,664,721
<u>Intramural</u>		
Direct Reimbursable	\$ 9,000	\$ 30,000
Direct Recoverable	\$ 9,000	

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report is written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

REMOVAL CONTINUES:

H. Hays Griswold, OSC
1500 hrs, October 5, 1999

c: Rich Haavisto, USACE-Sacramento
Renee Zollinger, Kleinfelder
Larry Schaleger, Jacobs
Robert Sextro, Jacobs

ATTACHMENT A

Data Quality Assessment

Introduction

This data quality assessment (DQA) for the Naples Truck Stop System is applicable to the analytical results for the following groundwater samples (listed in Table 1) collected on November 3, 1999.

TABLE A-1 – SAMPLE LOCATION SUMMARY		
<i>Sample Location Name</i>	<i>Sample Location ID</i>	<i>Number of Locations</i>
Groundwater Monitoring Wells	MW01 - 04, 06, 08 - 10, 14, 15, and NGMW01 & 06	twelve groundwater (GW) wells
Vapor Monitoring Point #1	VMP01	one GW port
Vapor Monitoring Point #2	VMP02	one GW port

All groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) by Method SW8020, and total volatile petroleum hydrocarbons (TVPH) as gasoline by Method SW8015M. All method-defined QA/QC requirements specified in SW-846 Test Methods for Evaluating Solid Waste Physical (Chemical Methods, US EPA, January 1995, 3rd edition, Updates I, II, IIA, and IIB) were followed. All groundwater samples were analyzed by EMAX Laboratories, Torrance, CA.

The data are of acceptable quality and are considered usable to support the U.S. Army Corps of Engineers (USACE), Naples Utah Truck Stop Project. The precision, accuracy, and completeness objectives for this sampling event were met with noted exceptions. Table A-2 (A & B) shows the sampling and analytical completeness. Completeness is measured in two ways; 1) sampling completeness (samples collected vs. planned), and 2) analytical completeness (percent of acceptable (non-rejected) analytical results vs. the total number of results reported).

Data Evaluation Process

One-hundred percent of the data was verified by a Jacobs project chemist in accordance with the general principles defined in the Jacobs Data Verification SOP. The following quality control (QC) parameters were evaluated:

- Sample preservation
- Holding times
- Laboratory method blanks
- Trip blanks
- Laboratory control sample and laboratory control sample duplicate (LCS/LCSD) recoveries and precision
- Matrix spike and matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision
- Surrogate recoveries

- Sample dilutions
- Initial and continuing calibration (as identified in the laboratory narrative)

Analytical results that required the addition of a qualifier flag based on the evaluation process are discussed below. When a result is qualified, a reason code is also added to the affected sample result to indicate the rationale for data qualification. Both the qualifier and reason code are entered into the database. The qualifier flags and reason codes applied to sample results for this project data set are summarized below:

Qualifier Flags

UJ = the analyte was reported as not detected at an estimated detection limit
J = the analyte concentration is estimated

Reason Codes

T = trace concentration detected above method detection limit (MDL) but below practical quantitation limit (PQL)
5 = LCS/LCSD imprecision
S = continuing calibration criteria not met

Ambient and Trip Blanks

Since much of the sampling is done in an active equipment yard with engines running and gasoline being dispensed, it was decided to collect an ambient conditions blank. This blank was collected by exposing a trip blank to the atmosphere during the time it took to sample one of the wells near the dispenser. The results for the ambient blank and also for the trip blank accompanying the samples in the cooler were non-detected for all compounds.

Laboratory Method Blanks

There were no contaminants detected in the method blanks associated with field samples. However, the gasoline method blank associated with the trip and ambient blanks had a trace concentration of gasoline reported. Gasoline was not detected in the trip and ambient blanks and therefore, data qualification was not required.

LCS/LCSD Recoveries and Precision

All LCS/LCSD recoveries were within acceptance limits. In one gasoline analytical batch, the LCS/LCSD relative percent difference (RPD) value (24) exceeded the maximum limit of 20 RPD. For the associated samples (trip blank and ambient blank), the gasoline results were qualified as estimated non-detects. In one BTEX analytical batch, the RPDs for BTEX exceeded the maximum RPD values. For the associated samples (trip blank and ambient blank), the BTEX results were qualified as estimated non-detects. All other RPD values were within the maximum RPD limit.

Calibration

For the BTEX continuing calibration performed on November 16, 1999, the m,p-xylene percent difference value exceeded the maximum 15 percent difference. For the associated samples (trip blank and ambient blank), the m,p-xylene results were qualified as estimated non-detects. All other calibration criteria were met.

All other QC criteria were within acceptance criteria, and there were no other qualified data other than trace level concentrations (above the method detection limit, but below the practical quantitation limit). These data have been qualified as estimated. A summary of all analytical results, including data qualifier flags and reason codes is presented in Table A-3.

Completeness

Overall sampling and analytical completeness objectives (90 percent) were met for all analytical methods (see Table A-2(A) and A-2(B)).

TABLE A-2(A)* - SAMPLING COMPLETENESS	
Sample Event	Phytoremediation Monitoring, Naples Truck Stop
Laboratory	EMAX Laboratories
Matrix	Groundwater
Analytical Methods	M8015V and SW8020 (BTEX)
Sampling Date	November 3, 1999
Total Number of Samples Planned	14
Total Number of Samples Collected	14
Sampling Completeness (%)	100

TABLE A-2(B)* - ANALYTICAL COMPLETENESS	
Sample Event	Phytoremediation Monitoring, Naples Truck Stop
Laboratory	EMAX Laboratories
Analytical Methods	M8015V and SW8020 (BTEX)
Sampling Date	November 3, 1999
Total Number of Samples Analyzed	14
Total Number of Results Reported	70
Total Number of Results Accepted	70
Total Number of Results Rejected	0
Analytical Completeness (%)	100

* Table A-2 does not include TBs and FDs.

Summary

The data are of acceptable quality and are considered usable to support the U.S. Army Corps of Engineers (USACE), Naples Utah Truck Stop Project. The precision, accuracy, and completeness objectives for this sampling event were met except as previously noted.

TABLE A-3
NAPLES TRUCK STOP
NOVEMBER 3, 1999 ANALYTICAL SUMMARY
 LAB #: 99K027

Location	Sample Date	Benzene	Toluene	Ethyl Benzene	Xylenes	Gasoline
	UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
MW01	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	29 J(T)
MW02	03-Nov-99	2.8	0.63	18	2.7	1600
MW03	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW04	03-Nov-99	7.8 J(T)	ND @ 2.8	41	54	630 J(T)
MW05	NOT COLLECTED					
MW06	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW06 FD	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW07	NOT COLLECTED					
MW08	03-Nov-99	20	1.7	36	10.6	1300
MW09	03-Nov-99	ND @ 0.28	ND @ 0.28	0.56 J(T)	0.29 J(T)	110
MW10	03-Nov-99	7000	36	1900	727	14000
MW12	NOT COLLECTED					
MW14	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
MW15	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
NGMW01	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
NGMW06	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
VMP01	03-Nov-99	ND @ 0.28	ND @ 0.28	ND @ 0.29	ND @ 0.64	ND @ 18
VMP02	03-Nov-99	1200	3.4 J(T)	11	7.9 J(T)	3100
TB	03-Nov-99	0.28 UJ(5)	0.28 UJ(5)	0.29 UJ(5)	0.64 UJ(5S)	18 UJ(5)
AB	03-Nov-99	0.28 UJ(5)	0.28 UJ(5)	0.29 UJ(5)	0.64 UJ(5S)	18 UJ(5)

Legend:

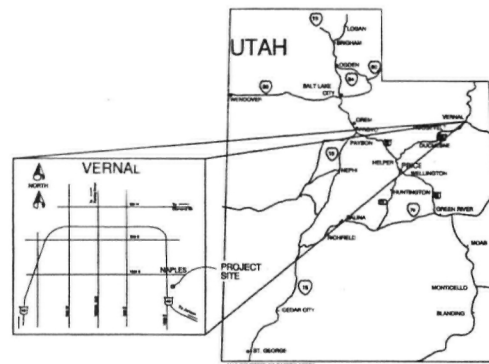
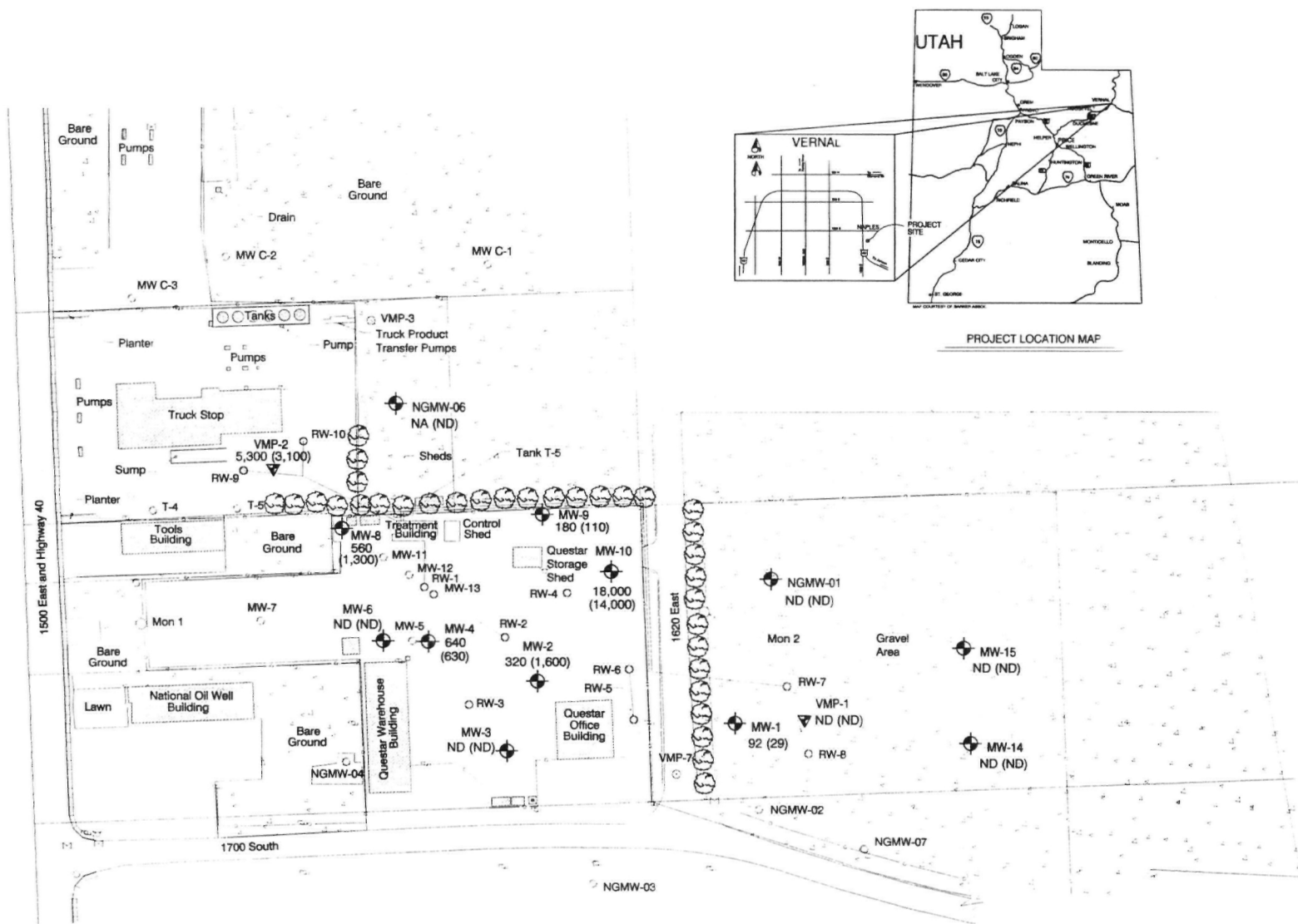
ND = not detected at method detection limit (MDL)

FD = field duplicate

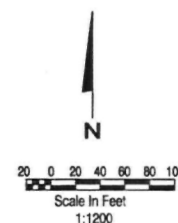
TB = trip blank

AB = ambient blank

T = trace

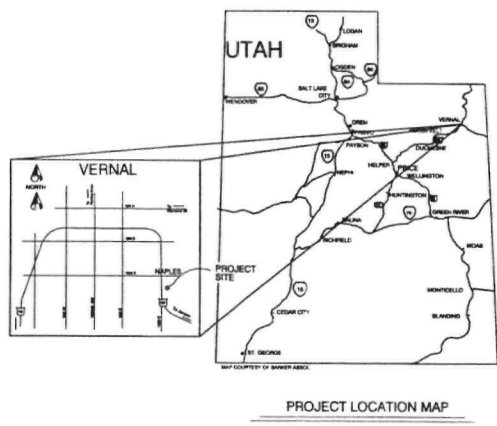
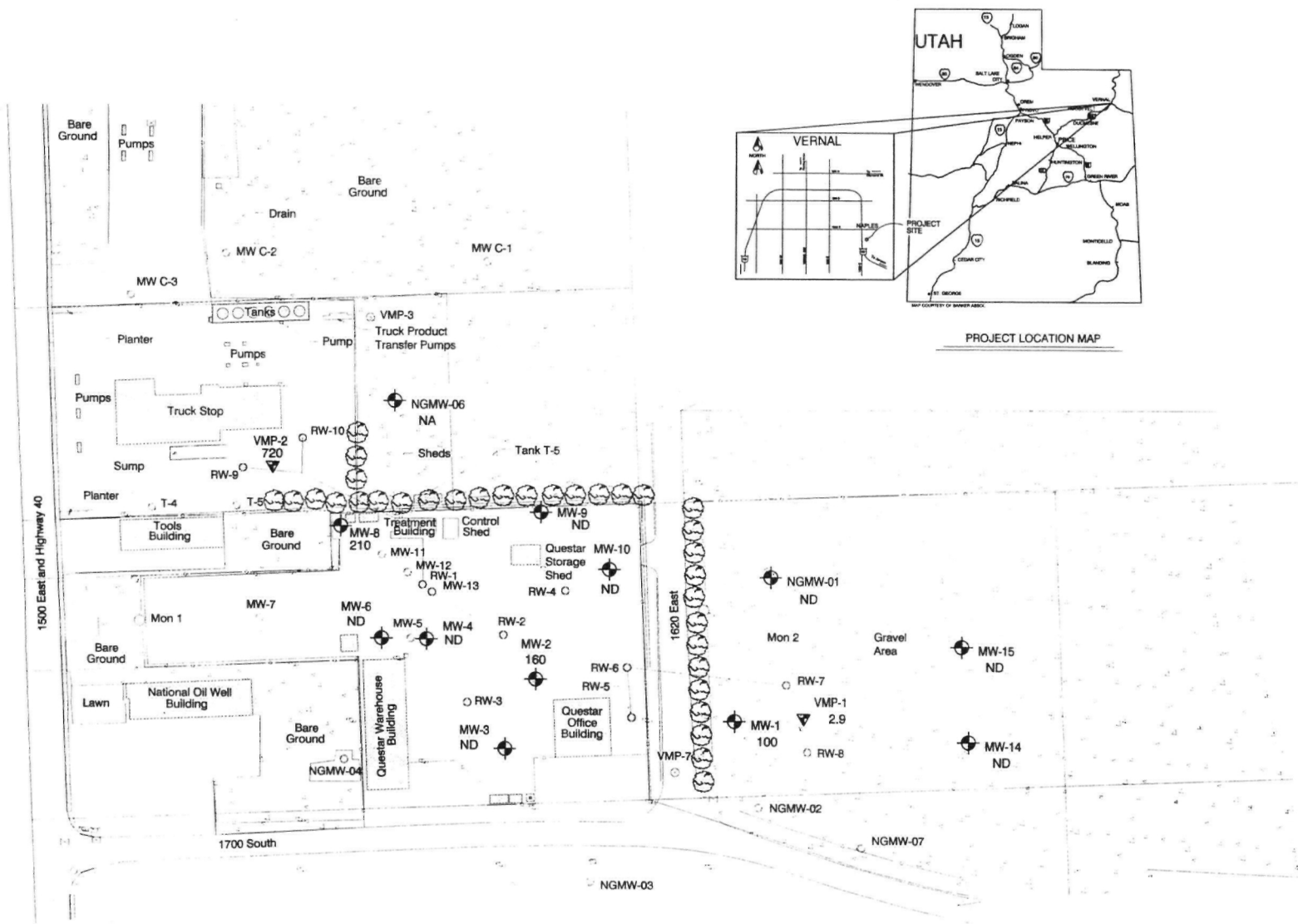


- Underground System Piping
- Recovery Well
- Fence
- Fire Hydrant
- Utility Pole
- Bare Ground and Gravel
- ▽ Vapor Monitoring Points Monitoring Well
- Property Line
- Water Meter
- Water Valve
- ☀ Monument Set
- Telephone Box
- Sewer Manhole
- Drain
- ⊕ Monitoring Well with Gasoline Concentration Posted in $\mu\text{g/L}$
- ND Not Detected
- NA Not Analyzed
- Tree

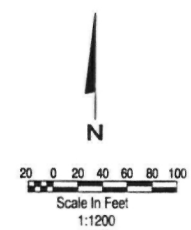


**Site Plan with Results for
April 2000 (November 1999)
Gasoline Monitoring Well Data**
Naples Truck Stop
Vernal, Utah

FIGURE 1



- Underground System Piping
- Recovery Well
- Fence
- Fire Hydrant
- Utility Pole
- Bare Ground and Gravel
- ▼ Vapor Monitoring Points Monitoring Well
- Property Line
- Water Meter
- Water Valve
- ☀ Monument Set
- ☒ Telephone Box
- Sewer Manhole
- Drain
- ⊕ Monitoring Well with MTBE Concentration Posted in $\mu\text{g/L}$
- ND Not Detected
- NA Not Analyzed
- Tree



**Site Plan with Results for
April 2000
MTBE Monitoring Well Data**
Naples Truck Stop
Vernal, Utah

JACOBS ENGINEERING

December 14, 1999

Transmittal

Tr# 99_004

TO: Mr. Rich Haavisto
Technical Manager
U.S. Corps of Engineers
Environmental Engineering Branch
1325 J Street, 12th floor
Sacramento, CA. 95814-2922

FROM: Larry Schaleger *LS*
Project Manager
Jacobs Engineering Group
2525 Natomas Park Drive, Suite 370
Sacramento, CA 95833

ON: Contract No. DACW05-98-P-0763
JEG Project No. 27-T031-00 Vernal, Utah - Vernal Naples Truck Stop

ATTACHED ARE _____1_____ ENCLOSURES _____1_____ COPY OF EACH RELEASED FOR:
CONSTRUCTION _____ PURCHASE _____ APPROVAL _____
FABRICATION _____ DESIGN _____ YOUR FILE _____X_____

ENCL NO.	DRAWING OR SPEC NUMBER	REV.	DESCRIPTION	DATE
1.		0	POLREP #66	14 Dec 99

REMARKS:

<u>Jacobs</u>	<u>Kleinfelder</u>	<u>EPA</u>
L. Schaleger	R. Zollinger (S.L.C.)	H. Griswold
R. Hergenrader *		
K. Poquette*	<u>USACE</u>	
R. Sextro	R. Haavisto (Sac)	
Project Files		
Contract Files*		

* Transmittal Only

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